Confidentiality of Medical Records in the W3-EMRS Project

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Background. The Boston Electronic Medical Record Collaborative is working to develop a system, the World Wide Web Electronic Medical Record System (W3-EMRS), that will use the Internet and the World Wide Web to transfer computer-based hospital patient information to the emergency rooms of participating institutions. We hope that this system, which has been described elsewhere,[1] will alleviate the knowledge deficit of emergency room patient-care providers by improving their access to relevant patient information.

We have proposed an approach[2] which we hope will define a standard for protecting the confidentiality of patient information while improving patient care by allowing emergency access to patient records. In this abstract, we explain the principles which underlie this proposal.

Principles. First, we recognize that tradeoffs between access and confidentiality must generally be made; it is not possible to achieve both perfect confidentiality and perfect access to patient information whether it is computerized or handwritten. Maximal confidentiality and maximal access cannot be attained simultaneously.

Second, we believe that advances of security in the Internet and World Wide Web technology which are needed for financial transactions, will be adequate to protect patient information during the transmission process. Consequently, we can expect secure electronic transfer of the information itself, and must concern ourselves mainly with ensuring the appropriateness of the transmission. To this end, we must define the methods by which a health care institution, using the Internet and the Web, can accurately identify a provider and a patient at a setting remote from that institution, while the patient is obtaining care in the remote setting.

Third, we recognize that in an emergency setting, it may not be possible to request permission from a patient to obtain access to his or her distant medical records. In this situation, and in the absence of a previous statement by the patient forbidding such access, under the doctrine of implied consent, we believe that information may appropriately be released to emergency providers without explicit consent.

Fourth, our experience with electronic patient records has led us to conclude that the most frequent risk to confidentiality is inappropriate access to information by authorized providers. One way of reducing this risk is to establish severe punishments for providers who violate patient confidentiality. Since many institutions with varying employment practices will be participating in the W3-EMRS project, it will probably be necessary for the institutions to agree on ways to settle disputes over appropriate punishments for cross-institutional violations of confidentiality. To know who has reviewed patient information using the W3-EMRS server, the technology will keep track of information from all requests for access.

Fifth, we recognize that concerns about the confidentiality of electronic patient records are of paramount importance to many people. Until the confidentiality-related aspects of the W3-EMRS system are performing as intended, and until the medical, legal, informatics, and civil liberties communities are comfortable with the confidentiality of the system, only "scrubbed" patient data, in which patient identifiers have been removed and aspects of the cases changed, will be displayed on the W3-EMRS servers.

Conclusions. Confidentiality concerns may prove a serious impediment to using the WWW to transfer patient records between institutions. We are convinced, however, that improvements in patient care can be expected from more widespread availability of vital clinical information.

References

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